

REMARKS/ARGUMENTS

Reconsideration of this application is requested. Claims 1-7 remain active in the application subsequent to entry of this Amendment.

Claim 1 has been amended and revised in order to more particularly point out and distinctly claim that which applicants regard as their invention and to be direct it to preferred aspects of the disclosure. The heat-resistant expanded graphite sheet is comprised of an organic phosphorus compound and only compressed expanded graphite particles with respect to graphite particles. The expanded graphite particles have an expansion rate of 200 to 300 times and are compressed. An organic phosphorus compound is dispersed in the amount indicated in claim 1. Claim 1 has been amended to include the preferred aspects of the disclosure, for instance the products generally described on pages 8-10 of the specification. The use of only compressed expanded graphite particles will be apparent from the description at page 9, lines 6-9 which are mixed with the organic phosphorus compound. The expansion rate of 200 to 300 times is disclosed for instance at page 9, line 12. Compression is described in the product preparation as noted at page 9, lines 12-14. Accordingly, the amendments made to claim 1 find basis in the original description of the invention.

Applicants' heat-resistant expanded graphite sheet according to amended claim 1 comprises an organic phosphorus compound, and only compressed expanded graphite particles with respect to graphite particles. The expanded graphite particles have an expansion rate of 200 to 300 times and are compressed, so that it is possible to provide the sheet with the high rate of oxidative wear resistance even in a wide temperature range from normal (ambient) temperature to 700°C or higher. This heat-resistant expanded graphite sheet can be used in various applications. In addition, the sheet according to the amended claim 1 possesses various properties including flexibility, easy workability, and the like, which properties are required for the expanded graphite sheets of this type, including molding into a shape.

The amount of organic phosphate compound present is important. If the content of the organic phosphorus compound is less than 0.1% by weight, it is impossible to make a sufficient contribution to heat resistance, and it is impossible to significantly improve the rate of oxidative wear resistance of the sheet. Meanwhile, if the phosphorus compound content exceeds 10.0% by weight, further improvement in the heat resistance cannot be expected, nor is it possible to

further improve the rate of oxidative wear resistance. In addition, if the content exceeds 10.0% by weight, there is a tendency for the sheet to become hard, hampering the flexibility which the sheet possesses.

The Official Action includes three prior art-based rejections, one of anticipation and the other two of alleged obviousness.

Claims 1, 2, 4 and 7 are rejected as allegedly being anticipated by JP '316. Citation JP 410101316A discloses a flexible graphite compound fire retardancy constituent including expanded graphite particles, a non-expanded graphite particles, and phosphorus.

This citation JP410101316A does not disclose a sheet which comprises only compressed expanded graphite particles with respect to the graphite particles, and that these expanded graphite particles with an expansion rate of 200 to 300 times being compressed.

Accordingly, there is no anticipation of claims 1, 2, 4 and 7, particularly as amended above.

All of the originally filed claims are rejected as allegedly being unpatentable over Hutchings '995 in view of Olstowski U.S. 3,719,608.

Hutchings '995 discloses a composition containing, an essential components, the reaction product of aluminum oxide or aluminum hydroxide hydrate and an organic amine phosphate or salt thereof, and expandable flake. However, Hutchings does not disclose compressed expanded graphite particles, nor the expanded graphite sheet in which the expanded graphite particles with an expansion rate of 200 to 300 times is compressed.

Olstowski discloses the oxidation resistant graphite composition including expanded graphite and certain inorganic compound blended with the expanded graphite. This citation does not disclose a sheet comprising an organic phosphorus compound, and only compressed expanded graphite particles with respect to the graphite particles.

Accordingly, applicants' claims as above amended are patentably distinct from the disclosures of this particular combination of documents.

In a separate rejection, claims 3, 5 and 6 are rejected as allegedly being "obvious" over JP '316. These claims are novel and patentable by virtue of their dependency from claim 1 and therefore this rejection should be withdrawn.

None of the cited documents discloses or suggests the novel combination in which the sheet comprises an organic phosphorus compound, and only compressed expanded graphite particles with respect to graphite particles, with expanded graphite particles having an expansion rate of 200 to 300 times being compressed, or that the organic phosphorus compound dispersedly distributed in a proportion of 0.1 to 10% by weight in the sheet, which is capable of providing the above synergistic advantageous effect.

Reconsideration and favorable action are solicited. Should the examiner require further information, please contact the undersigned.

Respectfully submitted,

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